

APPARATUS AND METHOD FOR DETECTING PILOT CHANNEL
SIGNALS WITH LOW SIGNAL-TO-NOISE

ABSTRACT OF THE DISCLOSURE

A CDMA receiver for detecting a pilot channel signal having a
5 known pseudo-random noise (PN) chip sequence, the known PN chip
sequence comprising a plurality of known Logic 1 chips and a
plurality of known Logic 0 chips. The CDMA receiver
comprises: 1) a memory for storing the pilot channel signal as a
first original sequence of chip samples; 2) a pseudo-signal
10 generator for re-ordering selected ones of the first original
sequence of chip samples to thereby generate a first re-ordered
sequence of chip samples, wherein the pseudo-signal generator
combines the original sequence of chip samples with the first re-
ordered sequence of chip samples to thereby generate a first
15 pseudo-signal sequence of combined chip samples; 3) a first matched
filter for computing a first correlation value indicating a
relative correlation between the first pseudo-signal sequence of
combined chip samples and the known PN chip sequence; and 4) a
decision circuit for determining from the first correlation value
20 if the pilot channel signal has been detected.